

## Claims

1. A method for analyzing organic adsorbent layers on a substrate, the method comprising the following steps:

  - providing a substrate with a surface, the substrate having an index of refraction equal or close to the index of refraction of the organic adsorbent to be analyzed ;
  - applying a layer system to the surface of the substrate, the layer system comprising at least one layer with index of refraction significantly different from the index of refraction of the biological material;
  - applying the organic adsorbent layer on top of the layer system
  - act polarized light upon the substrate
  - detect in reflection and/or transmission the change of polarization characteristics of the light acted upon the substrate.
2. Method according to claim 1 comprising the step of detecting the reflection and/or transmission amplitude of the light acted upon the substrate.
3. Method according to one of the previous claims comprising the step of selecting the substrate material out of the group of glass and plastic materials.
4. A method according to one of the previous claims characterized in that said at least one layer is chosen out of the group of  $Ta_2O_5$ ,  $Nb_2O_5$ ,  $TiO_2$ ,  $HfO_2$ ,  $ZrO_2$ ,  $MgF_2$ .
5. Method according to one of the previous claims comprising the step of optimizing the layer thickness distribution of the layer sytem in order to provide optical response allowing for desired, preferably maximum sensitivity with respect to changes in the adsorbent layer to be analyzed.

6. Method according to one of the previous claims comprising the step of selecting  $\text{SiO}_2$  as top layer forming the interface to a contact layer and/or the adsorbent layer to be analyzed.  
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7. Method according to one of the previous claims comprising the steps of applying a structured layer system thereby creating multiple subareas with maximum sensitivity for different adsorbent layer characteristics.  
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8. Method of performing imaging ellipsometry comprising the steps of one of the methods according to one of the previous claims.  
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